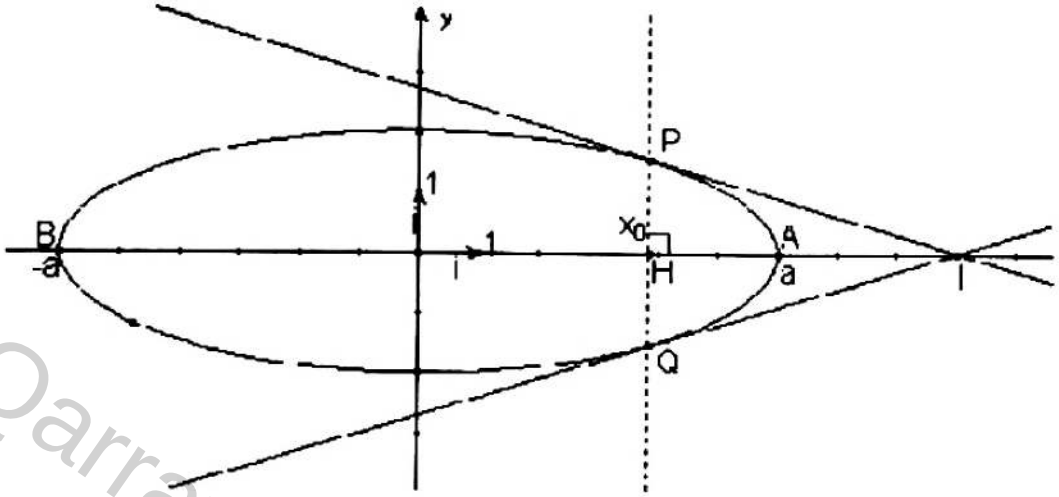
Exercice 30

$(E): \frac{x^2}{a^2} + \frac{y^2}{\left(\frac{a}{2}\right)^2} = 1$

d'où A(a , 0) ; B(-a , 0)

$\overrightarrow{IA} = \overrightarrow{AO} \Leftrightarrow A = O * I \Rightarrow I(2a, 0)$



$P(x_0 , y_0) \qquad Q(x_0 , -y_0)$

$(E): \frac{x^2}{a^2} + \frac{4y^2}{a^2} = 1$

(T): la tangente à (E) en P

$(T): \frac{x\,x_0}{a^2} + \frac{4\,y\,y_0}{a^2} = 1$

$$I(2a, 0) \in (T) \Rightarrow \frac{2a\,x_0}{a^2} + 0 = 1 \qquad \boxed{\Rightarrow x_0 = \frac{a}{2}}$$

$$\boxed{y_0 = \frac{\sqrt{3}}{4}a}$$

$H = P * Q \Rightarrow H\left(\frac{a}{2}, 0\right)$

$$tg\left(\frac{1}{2}P\hat{I}Q\right) = tg(P\hat{I}H) = \frac{PH}{IH} = \frac{|y_0|}{|x_0 - 2a|} = \frac{\frac{\sqrt{3}}{4}a}{3\frac{a}{2}} = \frac{\sqrt{3}}{6}$$

$\Rightarrow P\hat{I}H = 16{,}1 \quad P\hat{I}Q = 32{,}2$

Qarray.tn -Aqra Blech- Qarray.tn